

SOURCE WATER PROTECTION PLAN

For Public Drinking Water Sources
in
Plaistow, New Hampshire

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Review and Update Annually

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This plan was prepared for the public drinking water systems in the town of Plaistow at the time of plan preparation. These include:

Public Water System	System Type	PWSID	Sources
26 CHANDLER AVE CONDOS	PCS	1932130	001
BLUEBERRY KNOLL ESTATES	PCS	1932150	001
BRYANT BROOK	PCS	1932110	001
CHANDLER TERRACE	PCS	1932190	001
CROSS RIDGE ESTATES	PCS	1932120	001
FOREST GLEN CONDOS	PCS	1932040	001
GOLDEN HILL	PCS	1932020	003
			004
			001
			002
GREENFIELD HILL ESTATES	PCS	1932090	003
			004
			002
			001
HOWARD MANOR CONDOS	PCS	1932160	002
MOONGATE FARM	PCS	1932060	001
PEU/TWIN RIDGE CONDOS	PCS	1932050	002
			003
			005
			001
RAINBOW RIDGE	PCS	1932170	002
			001
STONEBRIDGE VILLAGE	PCS	1932080	003
STRAWBERRY HILL	PCS	1932100	001
SWEET HILL ESTATES	PCS	1932200	001
TUXBURY MEADOWS	PCS	1932180	001
			002
VALLEY FIELD APTS NORTHLAND	PCS	1932070	001
			003
WEST PINE CONDO ASSOC	PCS	1932210	001
			002
			003
			004
WESTVIEW PARK CONDO	PCS	1932030	001
			002
AMERICAN LEGION POST 34	TNC	1939020	002
BRICKYARD I PLAZA	TNC	1938090	001
BRICKYARD II PLAZA	TNC	1938150	001
COTTAGE PLAZA	TNC	1938170	002
DANOS PIZZA AND SUBS	TNC	1938010	001
DUNKIN DONUTS PLAZA	TNC	1938110	001

Public Water System	System Type	PWSID	Sources
EGGIES DINER	TNC	1938040	001
FITZGERALD SAFETY COMPLEX	TNC	1936160	001
LARRYS CLAM BAR	TNC	1938060	001
PLAISTOW FISH AND GAME CLUB	TNC	1939010	001
PLAISTOW PETRO KING	TNC	1938220	001
PLAISTOW SHOPPING CENTER	TNC	1936030	002
PLAISTOW TOWN HALL	TNC	1939050	001
PRIMO PASTA	TNC	1938050	001
SAWYERS BANQUET FUNCTION FACILITY	TNC	1939030	001
SAWYERS RESTAURANT	TNC	1938080	001
			003
VIC GEARY SENIOR CENTER	TNC	1938140	001
AGES & STAGES	NTNC	1935060	002
BECKWOOD SERVICES	NTNC	1936280	001
CHART INDUSTRIES	NTNC	1936070	001
			002
COUNTRYSIDE CHILDCARE	NTNC	1935070	001
FIELDSTONE INDUSTRIAL PARK	NTNC	1936270	001
GREAT ELM PLAZA	NTNC	1938190	001
MARKET BASKET DEMOULAS #25	NTNC	1936150	002
			001
PENTUCKET SHOPPING CTR	NTNC	1936100	002
			004
PLAISTOW COMMONS	NTNC	1936130	001
POLLARD ELEMENTARY SCHOOL	NTNC	1935010	001
			002
SCANDIA PLASTICS INC	NTNC	1936110	001
SHAW'S PLAZA	NTNC	1936230	001
			003
SWEET HILL KINDERGARTEN	NTNC	1935040	001
TIMBERLANE MIDDLE SCHOOL	NTNC	1935020	001
			001
TIMBERLANE RGNL HIGH SCHOOL	NTNC	1935030	001

System Types:

C = Public Community System

TNC = Transient Non-community System

NTNC = Non-transient Non-community System

1. INTRODUCTION

This Source Protection Plan (SPP) was prepared by the Plaistow Source Water Protection Committee and the Northeast Rural Water Association for public drinking water sources in the town of Plaistow, New Hampshire. There are fifty-one public drinking water systems (PWS) in the town of Plaistow, all of which develop their drinking water from groundwater: nineteen community systems (PCSs), fifteen non-transient non-community systems (NTNCs), and seventeen transient non-community systems (TNCs). In addition, many Plaistow residences are served by private wells.

Although not all of Plaistow's PWSs draw water from the same aquifer, they all develop their public drinking water from local groundwater. In this respect, the Plaistow Source Water Protection Committee has considered protection measures for all groundwater in the municipality in order to achieve the greatest public health protection.

The purpose of this SPP is to protect the quality of Plaistow's drinking water by identifying and managing potential sources of contamination and threatening activities that occur within the source protection area. The plan identifies and outlines a structured approach to managing potential sources of contamination and threatening activities that occur within the source protection area. It is a working document that will be routinely reviewed and updated to remain current, active, and viable.

1.1 Source Protection Area

The Wellhead Protection Areas (WHPA) for each Plaistow's public water systems have been delineated by the State Of New Hampshire Department of Environmental Services (DES) (Figure 1). All of the PCS and NTNC WHPAs are calculated fixed-radius circles the radius of which is determined by the volume of withdrawal of the source. For TNCs, WHPAs are circular areas with 500-foot radii.

Wellhead Protection Areas (WHPA) are the land areas from which groundwater and surface water will flow to the well under pumping conditions. As such, these land areas are the critical areas for source water protection. Due to the number and density of public drinking water systems in Plaistow, most of Plaistow's WHPAs overlap one another in a web of overlapping circles (Figure 1). Also, it is likely that additional public water sources will be needed in the future. For these reasons, the Plaistow Source Water Protection Committee determined that while certain protection measures are necessary within the public water sources' WHPAs, other contaminant prevention measures are appropriate town-wide to protect Plaistow's groundwater resources for future drinking water needs.

2. POTENTIAL SOURCES OF CONTAMINATION

Table 1 lists the potential sources of contamination within the town of Plaistow from NH DES's drinking water supply database. Because most of Plaistow's WHPAs overlap one another, and because they encompass most of the area of the town, most of these potential contaminant sources lie within a WHPA and therefore pose a risk to public drinking water supplies. *See Table 1.*

3. ASSESSMENT OF THREATS

The vulnerability of Plaistow's fifty-one public drinking water systems' sources to a number of contaminant criteria is summarized in Table 2. Certain potential contaminants or land uses are shared by most of Plaistow's public drinking water sources' Wellhead Protection Areas (WHPAs). The following threatening land uses or potential contaminant sources are commonly received a high vulnerability ranking for Plaistow's public water sources:

1. Known detects of contaminants in water samples (Most commonly MtBE and VOCs).
2. Location and number of highways and roads within the WHPA.
3. Number and proximity of septic systems and sewer lines within the WHPA.
4. Anthropogenic potential contaminant sources within the WHPA (hazardous waste facilities, underground storage tanks, etc.).
5. Percentage of urban land cover with the WHPA.

These criteria for which the majority of Plaistow's public drinking water sources received highly and moderately vulnerable rankings are discussed below.

1. Confirmed Contaminant Detects of Concern in Source Water

The routine monitoring samples required by NH DES of all public water systems has detected the presence of contaminants in 13 of the 56 public drinking water wells for which it has completed a Source Water Assessment to date. In addition, the Plaistow community has been alarmed by several detections of MtBE in private wells. Detection of these contaminants in source waters indicates that contaminants have been released to groundwater in certain areas. For this reason the drinking water sources that have detected non-naturally occurring substances are vulnerable to contamination.

2. Hazardous Waste Sites

The primary concern with facilities that generate or use hazardous materials is that leaks, spills, or improper disposal could allow contaminants to be discharged into the ground. xx facilities within Plaistow use or generate hazardous waste. The risk to Plaistow's public wells from hazardous waste sites is considered high.

3. Sewer Lines and On-Site Septic Systems

On-site septic systems and sewer lines represent potential sources of nitrates, chlorides, bacteria and viruses. In addition, if improperly used, such as for disposal of paints, solvents,

petroleum products and other hazardous wastes, they could also be a source of organic compounds. NH DES's land use assessment summary has rated the presence of septic systems within WHPAs as a high or moderate risk for 43 of the 56 public drinking water wells for which it has completed a Source Water Assessment to date.

4. Roadways / Transportation corridors

Roadways present a significant threat to several of Plaistow's drinking water sources, as every accident represents a potential hazardous materials release. The greatest threat to the wells is the possibility of an accident involving a truck transporting bulk shipments of hazardous materials. Roadways are also considered a potential source of contamination because of the potential for leaks from vehicles, which could result in a release of petroleum products, and the application of road salt, which could cause elevated levels of sodium and chlorides in the well. Transportation corridors are considered a high risk to Plaistow's public wells.

5. Underground Storage Tanks

Fuel oil tanks represent a potential source of petroleum compound, which include both volatile and semi-volatile compounds as well as chemical additives that may be present in the fuel. The potential threat of contamination from this source would be from a leak, overfill, or spill. Plaistow's WHPAs contain both known (Leaking Underground Storage Tanks (LUST) or leaking residential heating tanks (OPUF)) and potential (Underground Storage Tanks (UST)) sources of petroleum contamination. The risk to Plaistow's public wells from Underground Storage Tanks is high.

6. Urban Land Cover

Urban land cover is characterized by impervious surfaces. Water quality impacts, such as loss of recharge, are associated with land cover percentages of imperviousness surface of 10% or more. 14 of the 38 community and non-transient non-community drinking water sources which have received a completed Source Water Assessment to date (transient systems do not receive a ranking for this criteria) have WHPAs with greater than 10% urban land cover. Six sources received a moderate vulnerability ranking because urban land cover characterizes 10% of the area within 1000 of the well. Consequently, the risk to Plaistow's public wells from urban land cover is high.

4. MANAGEMENT PLAN

The source protection area referred to in this plan is the area comprised by the WHPAs of Plaistow's public drinking water sources. These WHPAs are the land area where groundwater and surface water flow to the wells. In order to reduce the potential risk of contamination to Plaistow's drinking water sources, the Plaistow Source Water Protection Committee will work with the community to implement the following management measures:

1. Conduct an education and outreach campaign

Public education and awareness is the cornerstone of this Source Protection Plan because everyone poses a risk to groundwater. Most homeowners and business owners will work try to protect their local groundwater if they know how to minimize contamination risks. The Plaistow education and outreach campaign will include, but will not necessarily be limited to, the following steps:

1. Send a letter and educational information to all residences and businesses within the WHPAs, except for those businesses that use greater-than-household quantities of regulated substances. This letter will alert the recipient of the location of WHPAs, and will accompany appropriate pamphlets about groundwater including “How to care for your septic system” and “Household hazardous waste disposal tips.” Businesses that use greater-than-household quantities of regulated substances are identified as PCSs in Section 2. PCSs will receive a slightly different letter.
2. Develop a media campaign to reach the public with educational information about local drinking water, and about the current Source Water Protection effort. Action steps include:
 - a. Post groundwater and drinking water facts as “bullets” on Plaistow’s public access TV channel
 - b. Place similar “bullets” with drinking water facts in Timberlane Schools’ newsletters
 - c. Incorporate ProjectWET and/or other groundwater activities into school curricula
 - d. Create informational pamphlets for businesses that use hazardous materials. Such pamphlets could be distributed by the town health officer during inspections, and to persons applying to the planning board for permits.
 - e. Create a handout about Plaistow’s Source Water Protection Program to distribute at town meeting.
3. Hold an informational meeting with local residents about the Source Water Protection effort to increase local awareness of the link between land use and drinking water quality and involve the public in Source Water Protection activities. This could be structured as a meeting or as a more informal water fair/public event with drinking water displays and activities.

2. Develop a BMP (Best Management Practices) Survey Program

Many of the high risks to Plaistow’s groundwater sources identified by NH DES’s Source Water Assessments are petroleum products and regulated substances (greater than household quantities of hazardous materials). Therefore, the committee will develop a Best Management Practice (BMP) Inspection/Survey Program for businesses that use regulated substances. BMPs are guidelines for the storage and handling of hazardous materials. Many

NH towns have implemented BMP survey programs because it is often the most effective way to prevent petroleum product and hazardous chemical contamination. The reason BMP survey programs are effective is because they are an ongoing town service which promotes awareness. BMP programs are mutually beneficial relationships between businesses and the town. Most businesses want to be perceived as “green,” or environmentally-friendly businesses, and the surveyor can help businesses identify safer ways to store and handle chemicals. The town benefits by playing an active role in preventing hazardous materials from contaminating groundwater, and through increased awareness of hazardous material users and locations.

BMP Survey programs can be either voluntary or mandatory. A voluntary program is one in which the surveyor asks to visit the business to talk about Best Management Practices and may only do so if the business is willing. A mandatory program requires the business to allow a survey. In order to implement a mandatory program a town must gain the authority to enforce the State BMP Rules. This authority can be gained either 1. by reclassifying local groundwater with NH DES, or 2. through local adoption of a town ordinance establishing the survey program. At this time, the Plaistow Source Water Protection Committee will work to develop a voluntary BMP Survey program. In the event that a voluntary program is not as effective as possible, the committee may choose to reclassify Plaistow’s WHPAs to Class GAA in order to gain local authority to enforce the state BMP Rules. Reclassification would result in a further protection: the prohibition of six high-risk land uses within WHPAs. These land uses are hazardous waste disposal facilities, solid waste landfills, outdoor storage of road salt, junkyards, snow dumps, and wastewater or septage lagoons. These prohibited uses do not apply to those facilities that already exist.

3. Drinking Water Source Protection Area Signs

Post drinking water source signs at road accesses to Plaistow’s WHPAs where appropriate, alerting travelers about the presence of the protection area and how to notify emergency personnel if a contamination event should occur.

4. Reduce the Contamination Risk from Used Motor Oil

The Plaistow Source Water Protection Committee will work to inform Plaistow residents how to safely dispose of their motor oil and provide increased opportunities for motor oil collection. Possibilities for improved motor oil collection opportunities include:

- a. Sponsor a used motor oil collection program at the town dump.
- b. Work to better inform the public regarding facilities that currently collect used motor oil.
- c. Hold a household hazardous waste collection day (in addition to the multi-town day held this year in Danville which does not accept used motor oil), and possibly hold the event more frequently than once a year.

5. Form a Source Water Protection Steering Committee

The following persons comprise the Plaistow Source Water Protection Steering Committee. This committee has developed this drinking water protection plan for their community, and has committed to implementing the contaminant prevention measures outlined above. Furthermore, this committee will meet at a minimum of once a year to review and update the plan and to assess its progress.

Source Water Protection Steering Committee

Charles	Blinn	Plaistow Board of Selectmen
Bruce	Dunn	Greenfield Hill Homeowners Assoc.
Larry	Gill	Plaistow Conservation Commission
Dick	Latham	Plaistow Citizen
Paul	LaVallee	Plaistow Conservation Commission
John	McArdle	Plaistow Fire Chief
Tim	Moore	Chair, Plaistow Planning Board
Kim	Onett	Plaistow Health Officer
Jill	Senter	Plaistow Conservation Commission
Merilyn	Senter	Chair, Plaistow Board of Selectmen
Peter	Taylor	Director of Facilities, Timberlane Regional School District

6. Create an Aquifer Protection Overlay Zone in the Town Zoning Ordinances

The town of Plaistow is underlain by a high yielding stratified drift aquifer: a valuable natural resource. Plaistow has also experienced significant growth pressures in the recent past, and continues to experience growth. The Plaistow Conservation Commission has worked to adopt an aquifer protection ordinance in the town's zoning ordinance. This ordinance provides a tool for town managers and planners to consider development proposals' impacts on town drinking water resources. The Source Water Protection Steering Committee will work to reduce the potential risk of contamination of Plaistow's groundwater resource for current and future drinking water sources by supporting the use of this ordinance to review future development projects.

5. CONTINGENCY PLAN

5.1 Emergency Response

If an emergency such as a spill or other contamination occurs within the Source Protection Area the following people/agencies may then be notified:

1. Plaistow Town Manager, Jim Scrutton (603) 382-5200

2. Affected drinking water system responsible person
(contamination incident within a water system's WHPA)
3. State Police (800) 562-8236
4. Plaistow Health Officer (603) 382-5200
5. NH Water Supply Engineering Bureau (603) 271-3139 or 271-3503
6. Office of Emergency Management (603) 271-2231 or (800) 852-3792
7. Public Health Services (603) 271-4496

5.2 Notification of System Users

If one of more of Plaistow's public drinking water wells should become contaminated, the drinking water system and/or the town of Plaistow will notify the water system users by one or more of the following methods:

1. Hand deliver a notice to each water system user
2. Post a notice at the Town Offices and Town Post Office
3. Place a notification in the Eagle Tribune and/or Carriage Town News
4. Broadcast an announcement on Channel 9, the Cable TV Stations (Timberlane Educational Network and Town's Local Access Channel)

5.3 Short Term Contingency Options

Short-term responses to either a quality or quantity outage will require one or all of the following options depending on the specific nature of the outage:

1. Issue a boil water notice and/or recommend that bottled water be utilized for drinking water purposes.
2. Trucked and delivered water from an approved source.
3. Request that water system users conserve available water.
4. Source treatment

Culligan Water Conditioning	(800) 400-0099
Department of Emergency Management	(800) 852-3792

Bottled water will be provided for potable (i.e. consumptive) use in the event of a water quality problem. Restrictions will be placed on the use of water for anything but consumptive use and personal hygiene.

Depending on the nature of a quality outage, water source treatment will be considered as a short-term solution to the problem. There are many types of pre-package treatment systems available on an emergency or short-term basis through the Emergency Management Section

of the Department of Public Safety, and many contractors providing remedial solutions for contamination problems. Many of these systems are available on a 24 to 48 hour basis.

5.4 Long Term Contingency Options

Additional water quantity may be required in the future due to decreases in well yield, increase in user demand, and/or a major point source contaminant impacting one of Plaistow's public water sources. At this time the town of Plaistow may choose to develop a municipal water supply or connect to a neighboring town supply. If the town does choose to site a municipal water supply source, this source should be sited outside of the residentially and commercially developed area of the town.

5.5 Water System Shut Down and Start Up Procedures

In the event that one or more of Plaistow's public water systems must be shut down for an emergency situation, the system personnel should follow the system's procedures for shutting off the well, and notify the Plaistow Town Manager.